CHAPTER 1.6 - Intermittent Discharges

The purpose of this chapter is to address sample collection and retesting issues for intermittent dischargers (including "fill & draw" types) for WDNR staff when determining permit requirements and for permittee use when conducting whole effluent toxicity (WET) tests.

NOTICE: This document is intended solely as guidance, and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced. This guidance does not establish or affect legal rights or obligations, and is not finally determinative of any of the issues addressed. This guidance does not create any rights enforceable by any party in litigation with the State of Wisconsin or the Department of Natural Resources. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.

NOTE: Department approval is required (according to Section 2 of the "State of Wisconsin Aquatic Life Toxicity Testing Methods Manual") whenever sample type, # of samples, holding time or other changes are made to WET test protocols which deviate from manual or permit requirements. Permittees should contact the Biomonitoring Coordinator or regional Department staff to discuss these types of situations and to receive approval to make changes to WET test protocols.

Requirements for Non-Continuous Discharges

Typically, discharges that occur continually for $\geq$ 1 hour in a 24 hour period are evaluated to determine whether acute whole effluent toxicity (WET) testing is necessary. Acute tests usually are not required for discharges that are < 1 hour in duration. Typically, discharges that occur continually for $\geq$ 4 days (96 hours) in a 7 day (168 hour) period are evaluated to determine whether chronic testing is necessary. Chronic WET tests are usually not required for discharges that are < 4 days (96 hours) in duration.

Monitoring Frequencies

The amount and frequency of WET testing for individual discharges should be determined by Department staff using the checklist in Chapter 1.3. Special considerations may be needed when stating specific monitoring requirements in permits for non-continuous discharges. For example, if the discharge is seasonal it may not be practical for dischargers to conduct testing on a quarterly basis (i.e., 4 tests per year). In situations where 2x yearly or greater monitoring has been recommended and discharges are non-continuous, it is important to insure that tests occur when the factors of concern listed in the checklist are present (e.g., during additive use, when process waste is present, etc.). It may not be possible for tests to occur during different seasons (i.e., discharges may occur at same time each year). When drafting permits, every effort should be made to require the amount of tests recommended by the WET checklist during the period of discharge, with tests completed at least 60 days apart. As an example, if quarterly testing is recommended and the discharge occurs only 2 months of the year, it is only possible to conduct 1 test per discharge (since there are only 60 discharge days). If the same monitoring frequency was recommended for a discharge which occurred for $\geq$ 8 months out of the year, all four tests should be required (60 days apart).

"Fill &Draw" Discharges

Some dischargers, usually smaller municipal and industrial treatment plants, have "fill & draw" type discharges which may make scheduling and sampling for WET tests difficult. In some instances, it may be necessary to alter standard WET test sampling and retesting procedures when discharges are fill & draw. According to the Methods Manual (Section 2, Part 2.2.2), 2 samples collected over a 3 day period (either grab or composite) are required to complete an acute test and 3 samples collected over a 6 day period (either grab or composite) are required to complete a chronic test. However, the Department does recognize that some situations (e.g., production schedules or receiving water flow situations which dictate when fill & draw discharges take place, etc.) do not always fit "normal" WET sampling or retesting schedules (see Ch1.1, attach. 1 for example of "normal" WET sampling

schedule).

Sample collection. Since most fill & draw type discharge events last more than 6 days, WET sample collection should not be a problem. In most fill & draw discharge situations effluent quality is not expected to vary significantly, therefore grab samples are acceptable. This also makes WET sampling easier to coordinate with production and discharge schedules. However, some fill & draw discharge situations may make it difficult to collect the 2 or 3 samples needed to complete a WET test. If fill & draw type discharge events do not last more than 6 days, making the normal WET sampling schedules difficult to implement, see Table 1.6A for more guidance regarding alternative sampling schedules.

"Intermittent" Or "Seasonal" Discharges

Some discharges, usually those from food industry, have "intermittent" or "seasonal" discharges, which may make scheduling and sampling for WET tests difficult. In some instances, it may be necessary to alter standard WET test sampling and retesting procedures when discharges are intermittent or seasonal.

Sample collection. As mentioned above, some intermittent discharge situations may make it difficult to collect the 2 or 3 samples needed to complete a WET test, especially if composite samples are required. In situations where effluent quality is not expected to vary significantly over a 24 hour period, grab samples are usually acceptable and may be easier to coordinate with production and discharge schedules (e.g., a single grab sample is usually acceptable for stabilization pond systems and other lagoons where detention time is longer). Normal WET sampling schedules are especially difficult to adhere to when discharge periods do not last for 3 days (72 hours) or more at a time. Table 1.6A contains possible adjustments to sample schedules, to accommodate shorter discharge periods:

Table 1.6A Adjusted Sampling Schedules for Intermittent Discharges

Discharge Duration	Maximum # of 24-h comp. samples to be collected	Comments
$\geq$ 6 days (144 h)	3	Sampling for acute & chronic tests should not be a problem with proper planning
3-5 days (72-120 h)	2	Sampling for acute tests should not be a problem with proper planning Chronic tests should be conducted with 2 samples, with prior approval from the Department *****; (Chronic tests usually not required if discharge < 4 days)
1-2 days (24-48 h)	1	Acute tests may be conducted with 1 sample, with prior approval from the Department *****; (Chronic tests usually not required if discharge < 4 days)

* Department approval is required since this is a deviation from the number of samples required by the Methods Manual (and therefore the WPDES permit); when fewer samples are used, deviations from sample holding times and sample types may have to be approved as well.

Permittees with seasonal or intermittent discharges will need to make a special effort to be ready to collect WET samples as soon as discharge periods begin. **Deviations from permit requirements** (e.g., if a grab sample is used instead of a composite; if 2 samples are used instead of 3; etc.) **must be noted on the WET report form required by Section 6 of the Methods Manual.**

Completing Retests After A Failure

In most cases, permits require that 2 retests be completed within 60-90 days after a WET test failure. When discharges are intermittent, scheduling retests may become difficult if the discharge period is not expected to extend at least 60 days beyond the original test date. In order to avoid this problem whenever possible, every effort should be made to schedule the original tests so that retests may occur during the same discharge period (e.g., perform compliance tests in the 1st month of discharge so that retests can be done in the 2nd and 3rd months, if needed). If a discharge period does not last long enough to perform needed retests, the Department may allow retests to be postponed until the next discharge period. Permittees should contact the Biomonitoring Coordinator (contact information listed in Appendix 2) or regional Department staff to discuss these types of situations and to receive approval to postpone retests.